WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

April 5, 2006

TO: Internal File

THRU: Wayne Hedberg, Permit Supervisor

FROM: Steve Fluke, Reclamation Hydrogeologist

RE: 2005 Second Quarter Water Monitoring, Genwal Resources, Inc., Crandall Canyon Mine, C/015/0032-WQ05-2, Task ID #2489

1. Was data submitted for all required monitoring sites? YES [X] NO [ ]

The Crandall Canyon Mine is currently operational. Water monitoring data is evaluated from the data that is submitted quarterly by the mine to the Division EDI database. The abbreviated and extended groundwater analysis list, abbreviated and extended surface-water analysis list, and water monitoring program are outlined in the mine's MRP in Tables 7-4, 7-5, 7-8, 7-9, and 7-10, respectively. Quarterly groundwater monitoring for the Crandall Canyon Mine is required for four quarters, however many of the monitoring sites are inaccessible during the first quarter due to remote locations and winter conditions. Monthly UPDES reporting requirements are presented in Appendix 5-14 of the MRP. Plate 7-18 presents the Crandall Canyon Mine Water Monitoring Sites Map.

Surface *Operational sampling is required quarterly for twelve stream monitoring sites. Seven sites have been added beginning with this quarter for the South Crandall Lease area and the Shingle Canyon IBC.*

With one exception, all surface monitoring sites were sampled and data submitted for the 2005 second quarter monitoring. Little Bear Creek was not monitored because it could not be accessed due to high flow in Huntington Creek through the end of June.

Groundwater and Wells *Operational sampling is required quarterly for fourteen spring monitoring sites and eleven in-mine monitoring well sites. However, only two of those in-mine monitoring sites (wells) are currently accessible (DH-1 and MW-1) and one has been destroyed. Ten spring sites have been added beginning with this quarter for the South Crandall Lease area and the Shingle Canyon IBC.*

All accessible groundwater monitoring and in-mine monitoring sites were sampled and data submitted for the 2005 second quarter monitoring. The springs in Little Bear Canyon and Section 4 creek were not monitored because they could not be accessed due to high flow in Huntington Creek through the end of June.

UPDES *Operational sampling is required monthly for two active UPDES sites; sediment pond discharge UT0024368-001 and mine water discharge UT0024368-002.*

The UPDES sites were sampled monthly and data submitted for the 2005 second quarter monitoring.

2. Were all required parameters reported for each site? YES [ ] NO [X]

Baseline resampling was conducted this quarter for monitoring sites requiring laboratory sampling. This resampling was conducted to mitigate for missing baseline resampling from 2000.

Surface All required parameters were reported with the following exceptions:

Baseline resampling data was initially missing dissolved selenium for all of the baseline resampling sites and acidity for five of the baseline resampling sites due to an oversight by the laboratory. The laboratory amended the reporting sheets to include the missing data.

Horse Creek: missing total suspended solids (TSS) and settleable solids due to laboratory error.

Groundwater and Wells All required parameters were reported with the following exceptions:

Baseline resampling data was initially missing dissolved selenium for all of the baseline resampling sites and acidity for SP-58 due to an oversight by the laboratory. The laboratory amended the reporting sheets to include the missing selenium data, but the missing acidity data for SP-58 could not be included.

UPDES All required parameters were reported.

3. Were any irregularities found in the data? YES [X] NO [ ]

Surface No irregularities were found in the data with the following exceptions:

Horse Creek – total alkalinity and bicarbonate are reported below two standard deviations. Total iron is reported at 1.39 mg/L, exceeding the Class 3A Cold Water Aquatic Wildlife standard of 1.0 mg/L.

Indian Creek – TSS and dissolved sodium are reported above two standard deviations.

UPF-1 – total iron is reported at 1.72 mg/L, exceeding the Class 3A Cold Water Aquatic Wildlife standard of 1.0 mg/L.

LOF-1 – TSS concentration is high (109 mg/L) likely due to high spring runoff.

Trends - Total dissolved solids, dissolved calcium, and sulfate have been steadily increasing in UPF-1 and LOF-1 since 2000 and 2001. Dissolved sodium has been steadily increasing in LOF-1 during this period. Levels do not exceed regulatory limits and may be do to drought conditions. This trend is not observed in other monitored streams for the permit area.

Groundwater and Wells No irregularities were found in the data with the following exceptions:

SP-36 – dissolved calcium is reported above two standard deviations.

SP-58 – TDS, total hardness, dissolved calcium and magnesium are reported above two standard deviations. These parameters have been steadily increasing since 2000 and 2001. Levels do not exceed regulatory limits and may be do to drought conditions.

UPDES No irregularities were found in the data.

4. On what date does the MRP require a five-year resampling of baseline water data?

Sampling and analyses for baseline parameters (Tables 7-5 and 7-9 in the MRP) are to be performed during low-flow (fourth quarter) in 1990, 1995, 2000, and at five-year intervals thereafter until the surety bond is released.

The next baseline resampling is scheduled for fall 2005. No baseline resampling data for 2000 has been submitted to the database. Gary Gray believes that the 2000 baseline resampling was conducted, but cannot find the data. The Division has decided

to allow the Permittee to conduct a baseline resampling during spring (second quarter) of 2005 as well as the scheduled fall of 2005 to make up for the lost data.

5. Based on your review, what further actions, if any, do you recommend?

Surface Continue tracking the trend of elevated constituents in Crandall Canyon Creek (UPF-1 and LOF-1). Arrange meeting with the Mine operator and hydrologist to discuss issue.

Groundwater and Wells Continue tracking the trend of elevated constituents in SP-58. Arrange meeting with the Mine operator and hydrologist to discuss issue.

UPDES No further action recommended.

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES [ ] NO [X]

Missing total suspended solids and settleable solids data for Horse Creek was due to a laboratory error and cannot be redone. These parameters have not historically been an issue for this site.

7. Follow-up from last quarter, if necessary. Did the Mine Operator submit or provide an explanation for missing and/or irregular data?

No follow-up from last quarter necessary.

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